

• COLORADO RIVER •
AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT



OF SOUTHERN CALIFORNIA

Vol. VII.

JUNE 25, 1940

No. 6



J. F. Shea Co. crews set up construction camp, excavate approach cut, and hole in the north portal of the Hollywood Tunnel.

• COLORADO RIVER •
AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

306 WEST THIRD ST.
 LOS ANGELES, CALIFORNIA

*Published monthly in the interest of
 Field and Office Workers on the Colorado
 River Aqueduct, and for the information
 of all other citizens of the Metropolitan
 Water District.*

Vol. VII June 25, 1940 No. 6

Work Started On Hollywood Tunnel

Bringing construction scenes reminiscent of the desert, but on a smaller scale, into the heart of the metropolitan area, crews of the J. F. Shea Co. began construction of the Hollywood tunnel on June 5.

Being built as a part of the distribution system feeder which will carry Colorado River water to the District cities of Beverly Hills and Santa Monica, the tunnel runs under the Hollywood Hills in the region west of Cahuenga Pass and north of Hollywood Boulevard.

The tunnel, which is being excavated to a diameter of seven feet, will have a concrete lined diameter of 6 feet and will be 3730 feet long. The tunnel line will have a slight angle in it at the half-way point.

Construction work is now under way at both the north portal, near the intersection of Oakshire Drive and Passmore Road, and the south portal, which is located 500 feet north of the end of Jalmia Drive in Nichols Canyon.

Because of the small diameter of the tunnel, the construction equipment itself looks like miniatures of similar equipment used on main aqueduct and upper feeder tunnels. The little mucking machine, for example, has a bucket capacity of about 2½ cubic feet. The track which this machine operates on has a gage of 24 inches. The mucking machine is driven by compressed air, and the men on the job have denied the rumor that they use it to pick their teeth with after meals. The little muck cars used on the job have capacities of 1½ cubic yards each.

In spite of its small size, construction of the tunnel presents difficulties similar to those on the larger bores, and the work is progressing on a three-shift basis. Wallace Young is superintendent for the contractor and Lars Christensen is the District inspector on the tunnel.



Believe it or not, but this cute little gadget is a mucking machine, and will be used in the excavation of the Hollywood Tunnel. The operator is Don Barker, an old-timer on the aqueduct who has worked on Shea Co. jobs all along the line from Parker Dam on in.

- DIRECTORY -

BOARD OF DIRECTORS

W. P. Whitsett, Chairman
 Franklin Thomas,
 Vice-Chairman
 S. H. Finley, Secretary
 Anaheim.....E. P. Hapgood
 Beverly Hills.....Arthur Taylor
 Burbank.....James L. Norwood
 Compton.....Warren W. Butler
 Fullerton.....Walter Humphreys
 Glendale.....Herman Nelson
 Long Beach.....William M. Cook
 Los Angeles.....Perry H. Greer
 Los Angeles.....Otto J. Emme
 Los Angeles.....D. W. Pontius
 Los Angeles.....John R. Richards
 Los Angeles.....Victor H. Rossetti
 Los Angeles.....W. P. Whitsett
 Pasadena.....Franklin Thomas
 San Marino.....John H. Ramboz
 Santa Ana.....S. H. Finley
 Santa Monica.....Arthur P. Creel
 Torrance.....Charles T. Rippy

J. M. Luney, Controller
 Ira R. Pontius, Treasurer
GENERAL STAFF
 General Manager and Chief
 Engineer.....F. E. Weymouth
 Asst. Chief Engineer.....

.....Julian Hinds
 General Counsel.....
James H. Howard
 Asst. General Counsel.....
Arthur A. Weber
 Chief Elec. Engineer.....
J. M. Gaylord
 Asst. to Gen. Mgr.....
Don J. Kinsey
 Asst. Controller, G. D. Smith
 Asst. Treasurer, C. G. Olson
 Secy. to Gen. Mgr.....
Elisabeth von Hagen

DIVISION ENGINEERS

Distribution.....R. B. Diemer
 Transmission.....Robt. N. Allen
 Maintenance.....W. J. Neale
 Field Supt. Pumping.....
T. T. Walsh

SUPERINTENDENTS

(Main Aqueduct Tunnels)
 San Jacinto Tunnel, District
 Force Acct., B. C. Leadbetter,
 Gen. Supt.

Softening and Filtration Plant
 Griffith Company, Weymouth
 Crowell Co., Project Manager,
 Olen Evans, Field Supt.

Waste Water Disposal Line
 United Concrete Pipe
 Corporation.

Schedule 29P

American Concrete &
 Steel Pipe Co.

Schedule 30SC

J. F. Shea Co., Inc.

Hollywood Tunnel

J. F. Shea Co., Inc.

Bids Called For On Remaining Feeder Lines

Within the last few days, the District has invited bids for the construction of approximately 43.7 miles of pipe lines and appurtenant works to be built on the distribution system of the Colorado River Aqueduct. These lines, when constructed, will complete the building of the initial phase of the Distribution System and will carry water to 12 of the District cities. At the present time the City of San Marino does not own its water system, and it is now expected that the short lateral connecting this city to the upper feeder of the distribution system will not be constructed until such a time as San Marino may request that it be built.

The lines to be built constitute the remaining sections of the San Rafael-Santa Monica feeder, which serves Glendale, Burbank, Beverly Hills, and Santa Monica; and the Orange County feeder which is to serve Fullerton, Anaheim, and Santa Ana—all of which are located in Orange County.

Bids are to be opened on June 25, under Specifications No. 333, for the construction of the remaining sections of the Santa Monica line. Contracts for 6.8 miles of pipe line and the Hollywood



A pre-sunrise view of the Lake Havasu shoreline as seen from the California bank of the big reservoir on the Colorado River.

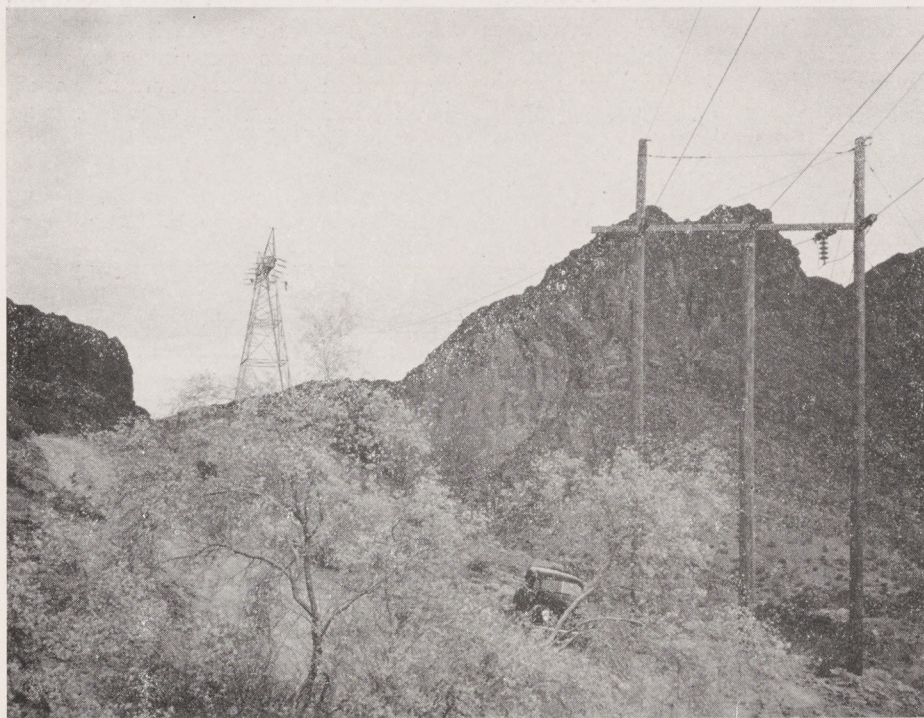
tunnel, which are a part of this line, were awarded on May 17.

The work still to be awarded is set up in three schedules totaling 16 miles in length. Schedule 31, with a length of

5.8 miles, will extend from Burbank to the north portal of the Hollywood tunnel. Bids are called for lock-joint steel cylinder reinforced precast concrete pipe with an inside diameter of 41 inches, welded steel pipe with gunite exterior coating and spun mortar lining, inside diameter 42 inches, and welded steel pipe 43 inches in diameter with gunite coating and coal-tar enamel lining.

Schedule 32, extending from the tunnel to Beverly Hills, is 4.8 miles long and bids are called for on three types of construction, including cast-iron pipe with spun mortar lining. Schedule 33 extends 5.4 miles from Beverly Hills to a point in Los Angeles near the eastern city limits of Santa Monica and near one of the latter city's reservoirs. Bids are also called for on three alternative types of construction on this schedule.

On July 10, the District will open bids under Specifications No. 335 for the construction of 27.7 miles of pipe lines which will extend from the softening and filtration plant now being built near La Verne to the city of Santa Ana. This work will be subdivided into four schedules, Nos. 34, 35, 36, and 37. Bids will be called for on three types of construction: lock-joint reinforced precast concrete; welded steel pipe gunite exterior and spun mortar lining; welded steel pipe with gunite exterior coating and coal-tar enamel lining.



Boulder Dam power now being sold to central Arizona consumers is delivered to the vicinity of Parker Dam via the District's transmission line seen in the background, and is then routed to Phoenix over this government built line.

MONTHLY REPORT REVIEWS ACTIVITIES ALONG THE AQUEDUCT LINE

(EDITOR'S NOTE: The following is a brief summary of some of the activities of the District as set forth in the monthly report of General Manager F. E. Weymouth, filed with the Board of Directors in June, covering work done in May.)

Legal Division

All necessary documents to secure payment for Interim Certificates Nos. 99 and 100, each in the denomination of \$756,000, representing bonds heretofore sold to the R.F.C., were prepared. Payment for said certificates was made May 31.

Miscellaneous Activities Division

During the month of May, 63 labor employment applicants were cleared as eligible for work on the aqueduct. Of this number, 4 were made available for force account work, and 59 were made available for aqueduct contractors. A total of 547 persons was interviewed.

Main Aqueduct

Salvage Division—The large mine hoists at Cabazon and Lawrence were sold and removed by the purchaser. Stock appraised and transferred to the Banning salvage yard during May amounted to \$11,258.78, making a total to date of \$2,343,961.02. Total disbursements to date are \$1,382,860.54.

Parker Dam—The average flow through the gates during May was 8,045 cubic feet of water per second. Construction work on the Parker Dam power plant was continuous throughout the month.

Testing and Conditioning—In connection with the testing and conditioning of completed aqueduct structures, regular patrols of the aqueduct were made and sand was removed from canal sand traps between Freda siphon and Iron Mountain. An inspection was made of all aqueduct structures immediately following the Imperial Valley earthquake which occurred on May 18 and no evidence of damage could be found.

Civil Engineering Division

Design—Specification drawings of pipe sections and structures for the Burbank-Santa Monica line, and design data in connection with the purchase of venturi meters and operation valves for both the Santa Monica and Orange County lines were completed. Design work was resumed on structures for the Orange County feeder and on the connection between Monrovia No. 2 Tunnel and Morris Dam. Preliminary sketches and estimate were made for a District office building in or near Los Angeles.

Materials and Inspection—The delivery of District furnished materials and equipment for the water softening plant included 4,300 barrels of cement.

Specifications—Four sets of specifications were completed during the month including No. 333 covering the construction of the remaining sections of the Santa Monica feeder. Bids were opened on four sets of specifications including No. 328 for the Glendale-Burbank feeder and No. 329 for the Hollywood Tunnel.

Distribution Division

Field and Office Engineering—Additional alignment surveys, profiles, improvement maps, and substructure investigations were made on the Santa Monica feeder in connection with possible line revisions, and staking of the final alignment is under way. Similar work is being done on the Orange County feeder. In the office, contract plan-profile drawings for the Burbank-Santa Monica line were completed. Studies and estimates were made relative to cost of connections to the water systems of member cities, and members of the staff have conferred with various city officials regarding desired points of delivery. Lines and grades were established and inspection was given on all construction operations.

Electrical Engineering Division

Pumping Plants—The pumping plants were operated intermittently on a single shift basis to supply water for testing aqueduct structures and reservoirs. During the month 13,879,100 kilowatt-hours of energy were used and 10,587.5 acre feet of water were diverted from Lake Havasu.

Miscellaneous—Studies were made and estimates prepared for the construction of a telephone line from the water softening plant at La Verne to connect with the District's system at Lake Mathews.

Purchasing Division

A total of 323 purchase orders was issued, covering purchases amounting to approximately \$32,800. Carload forwardings totaled 5.

Accounting and Costkeeping

The total cost of the work accomplished to May 31, 1940, was \$183,857,-418.49.



Louis S. Nordlinger

Death Takes Director Nordlinger

Director Louis S. Nordlinger, Los Angeles representative on the Board of Directors of the Metropolitan Water District, died on Saturday, June 8. Death was due to a heart attack.

Mr. Nordlinger was one of the pioneer civic leaders of Los Angeles, and had been a member of the District's Board of Directors since August, 1937.

He was a native son, having been born in Los Angeles on June 21, 1875. He began his business career in an engraver's shop in San Francisco where he learned jewelry and silverware engraving. Later he entered his father's jewelry business in Los Angeles. This was one of the city's first jewelry businesses, having been established in 1869. It was later known as Nordlinger & Son.

Mr. Nordlinger became president of the firm in 1911, which in 1923 was sold to the present owners, Brock and Company. Mr. Nordlinger remained with the latter firm until 1925 when he retired from active business.

He had been a director of the Farmers and Merchants National Bank since 1915, a director since 1917, and secretary since 1925 of the First Industrial Loan Company. From 1922 to 1936 he was Director-Secretary of the Retail Merchants Credit Association of Los Angeles.

He was one of the organizers, and at the time of his death was Trustee, of the Federation of Jewish Welfare Organizations. He was also Director-Vice-President of the Los Angeles Tuberculosis and Health Association.

Restrictions Applied To Pumping Plants

Acting on the recommendation of General Manager Weymouth, the District's Board of Directors on June 7 placed into effect certain precautionary measures and restrictions for the protection of the five pumping plants along the line of the main aqueduct. The Board's action provides that:

"All plants will be enclosed by suitable fences; entrance gates will be locked and will be opened only by the operator in charge who will admit only those who have passes.

"All employees of the District having free access to the pumping plants will be required to file detailed personal statements, together with fingerprint records and photographs. Each such employee will be provided with an identification card and pass.

"All visitors will be required to secure individual passes from the Los Angeles office. Visitors will be admitted to the plants only during the day shift, and must be accompanied by an authorized employee.

"Individual passes will be furnished to all directors and members of the staff who have occasion to visit the plants on official business.

"Free access to the camps will be permitted at all times."



M.W.D. Inspector Tom Cain looks over the inside of the Upper Feeder by-pass near the softening plant. He is standing between the inner seats of the two big gate valves which control the operation of the structure.

Erection of steel fences and preparation of passes and identification cards and records are under way and is expected to be completed by the time this issue of the NEWS is distributed. The locations affected are the Intake, Gene, Iron Mountain, Eagle Mountain, and Hayfield pumping plants.

Building of Water Plant Passes Half Way Mark

With approximately 280 contractor's employees on the job, the building of the District's water softening and filtration plant has now passed the half-way mark, according to latest construction progress reports.

As of June 15, excavation and earthwork was 79 per cent completed, with approximately 115,500 cubic yards of earth having been excavated at that time. Excavation of the trench for the two large concrete pipe lines which connect the plant with the upper feeder of the distribution system was completed, and by the middle of June a total of 147 sections of pipe, or 85 per cent of those required, had been placed. These giant sections of precast concrete pipe have an inside diameter of 11 feet 8 inches.

Because of the intricate nature of the various features of the plant and the complex nature of the reinforcing steel and forms, mass production placing of concrete in the main plant is not possible, although concrete is being placed at a rate of from 300 to 400 cubic yards per week. As of June 15, a total of 15,786 cubic yards of concrete, or about 54 per cent of the estimated amount required, had been placed in the plant.



Not the gas house gang, but the softening plant gang. From left to right, top to bottom: Les Martin, M.W.D.; Ray Gomes, Griffith Co.; Hank Johnson, M.W.D.; Pete DePace, M.W.D.; Cliff Taber, M.W.D.; Sherm Mason, M.W.D.; Bill Aultman, M.W.D.; L. Berglund, Griffith; E. B. Milnor, Griffith; O. Evans, Griffith; Bill Pratt, M.W.D.; Louie Grossman, M.W.D.; Joe Brown, M.W.D.; Glenn Lucas, M.W.D.; W. L. Squires, Griffith; J. Hepinstall, Griffith; H. C. Crowell, Griffith; J. R. Parker, Griffith; and B. H. Martin, M.W.D.

Positions Open On Parker Dam Power Plant

With preliminary excavation work now nearing completion for the Parker Dam power house, the U. S. Reclamation Service has announced that it will conduct civil service examinations for a number of positions in connection with the Government force account work soon to be started on the project. The positions for which examinations will be given are:

Foreman, Maintenance Shop, general construction machinery, \$3000 per year. Foreman, Structural Steel Construction, \$3,600 per year. Foreman, Reinforcing Steel Construction, \$2,700 to \$3,000 per year. Foreman, Concrete Construction, \$3,300 per year. Foreman, Electrical Installations, \$3,000 per year. Foreman, Carpenter, \$2,700 to \$3,000 per year.

The announcement of examinations (Announcement No. 12-154) states that applications for the examinations must be filed before the close of business on July 2, 1940. The applications may be obtained from the Secretary, Board of U. S. Civil Service Examiners, at any first or second class post office in Imperial, Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties in California; or Maricopa, Pima, Pinal and Yuma counties in Arizona.

The announcement states that the examination will require *no* written test, the applicants to be rated on the extent



Going down! An honest-to-goodness deep sea diver at work in the middle of the desert. His services were required in connection with dewatering operations at the Parker Dam power house foundation.

and quality of their experience. General qualifications require that applicants shall not be more than 50 years old, and that they shall have had at least four years of experience in the trade or occupation for which application is made, and in addition that they shall have had four years of supervisory experience of a high order in their trade or occupation.

Latest reports from Parker Dam show that dewatering of the power house foundation has been completed, and that excavation is practically completed for the penstock tunnels. Other general excavation work has also been completed in preparation for the erection of the power house and appurtenant works.

Pipe Fabrication To Be Started

Fabrication of the pipe for the two schedules on the Glendale-Burbank section of the Santa Monica feeder is expected to be started by the early part of July, according to present plans of the J. F. Shea Co. and the American Concrete and Steel Pipe Co., contractors on Schedules 30SC and 29P respectively.

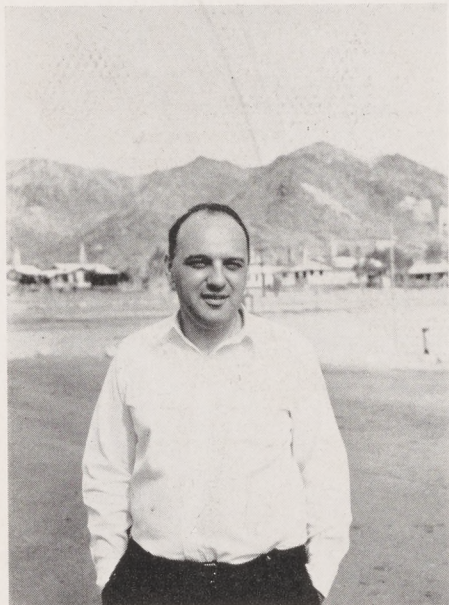
The American Concrete and Steel Pipe Co. will manufacture its pipe, steel cylinder reinforced precast concrete, at its plant in Southgate.

It is understood that the Shea Co. has subcontracted various phases of the processing of the pipe which it will place. This pipe is to be welded steel coated with gunite and lined with spun mortar. Fabrication of the steel pipe is to be done by the Southwest Welding Co., and the gunite coating and spun mortar lining is to be applied by the Macco Construction Co. at its plant in Clearwater.



This picture is probably going to cause an argument—in which the editorial department of the NEWS will take no part. It is a moonlight view of the Iron Mountain Pumping Plant delivery line. B. H. Martin, now resident engineer at the softening plant, swears up and down that he took it at 1:30 A. M. in the morning and that it only required a ten-second exposure. Some of the amateurs say it can't be done—but, here's the picture.

NEWS FROM FIELD AND OFFICE



The desert heat hasn't produced any noticeable shrinking of the school-boy figure of Ralph Zook, in spite of the fact that he has been working on various desert jobs for the District since 1933. He is now chief clerk of the Aqueduct Maintenance section with headquarters at Iron Mountain.

All the office boy can say is that it's a good thing that the aqueduct has been built to carry water—and not to float on water, the above comment having been brought about by the following incident. On Saturday, June 8, C. S. Glazbrook of the Design Division invited Norman Beaton, S. F. Coghlan, and Galer Royer to go with him on his boat for a week-end cruise to Catalina. Glazbrook's boat, of which he is justly proud, is powered by a Ford V-Eight motor. Everything went fine until the party started home on Sunday. Then, there was nothing particularly wrong except that the motor wouldn't start. That, however, seemed like a very minor trifle inasmuch as three of the aforesaid gents are high-powered mechanical engineers who have done their stuff in the Electrical-Mechanical Division, and the skipper himself is a mechanical-structural engineer. Anyhoo, to make a sad story short—all of these high-powered mechanical brains couldn't figure out how to make the teakettle boil, and as a result Messrs. Beaton and Royer had to thumb their way across the channel back to the mainland, and Glazbrook and Coghlan used up the major part of their annual leave waiting for a tow to get the boat back to its home port. Latest reports were that Skipper Glazbrook,

Aqueduct Temperatures

May 16 to June 15, 1940

	Max.	Min.
Gene Pumping Plant.....	120°	75°
Iron Mt. Pumping Plant....	119°	66°
Eagle Mt. Pumping Plant	118°	67°
Banning	98°	44°
Lake Mathews	89°	48°

et al, are now signing up at a local night school to study the mysteries of internal combustion engines.

* * *

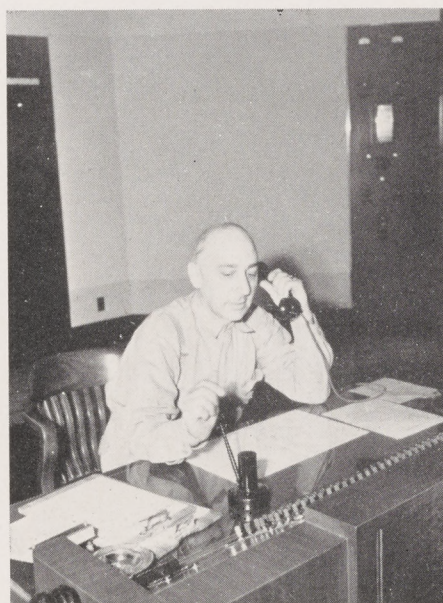
A Personnel Division report shows that Edmond Quear is now an Operator at the Eagle Mountain Pumping Plant.

* * *

Everett Farmer, formerly of the Electrical-Mechanical Division, and one time President of the M.W.D. Employees Association, visited the District office and the main aqueduct during the week ending June 22. Everett is now with the T.V.A. with his headquarters at Chattanooga, Tenn.

* * *

The Metropolitan Water District Employees Credit Union has finally received permission from the Federal agency which controls this group to include field employees in the credit union. All employees in pumping plants, trans-



Dave Snarr shown in action as he serves his "trick" as Operator at the Iron Mountain Pumping Plant. Dave has been with the District since 1936 where he was first employed as an electrician at the Potrero shaft of San Jacinto Tunnel.



This picture was really snapped to illustrate the manly "fiz" of Jack Armstrong, but the picture taker got more of the Palm tree at Gene headquarters than he did of Jack. John Stuart Armstrong is Chief Clerk for the Electrical Division operation and maintenance work. He started with the M.W.D. as a timekeeper at Berdoo in 1933.

mission lines, and aqueduct maintenance work are now eligible to join the union, which last year paid its members slightly better than 4 per cent interest on their money. Applications for membership have been left at all pumping plant and maintenance offices, and additional information may be obtained from Doug Fagg, C. G. Olson, and Charles Brandt, all of the Los Angeles office.

* * *

Bill Croden, Senior Dispatcher at Gene pumping plant, has added another girl to the string of young ladies calling him pappu. The latest arrival is Cecilie Marie who was born on June 5, weight 6¾ pounds. Bill and Eddie Cantor are having a race tiz said.

* * *

Another arrival that accidentally missed the last NEWS was that of Joan Illeyene Armstrong who weighed 7 pounds 11 ounces when she was born on May 23. Her very proud pappu is Bob Armstrong of the Design Division.

* * *

John Binney, one of the old-timers in the Electrical-Mechanical Division and who had charge of the District's telephone work, resigned from the District on June 1 to accept a position with the Southern California Edison Company.

Lightning Flashovers Tracked Down

Although the operation of a big electric transmission system, such as that which provides power for the operation of the five aqueduct pumping plants, is mysterious to the average aqueducker—he is still interested in the how and why of such operations.

The following was prepared by Wendell Morgan, of the Electrical Division, to explain what happens when desert electrical storms range along the 237 mile length of the transmission line:

"Insulator flashovers on the District's 230-kv transmission line are now readily located by the use of instruments called 'Disturbance Recorders'. Recent lightning storms gave these instruments their first tryout. Since there are 237 miles of line to cover, these 'Disturbance Recorders' will save the patrol crews many hours and miles of tedious searching for bad insulators during the coming lightning season.

"The 'Disturbance Recorders' are located at Gene and Hayfield pumping plants and at Boulder power plant, being placed at each end of the 'Y' shaped 230-kv transmission line. They are essentially high-speed recording ammeters that go into operation at the time of the fault, and measure the fault current to



Fisherman's Cove on the California bank of Lake Havasu near the Intake Pumping Plant of the Colorado River Aqueduct.

the ground. Using the ratios of the three current values which are obtained by telephone, the dispatcher with little delay looks up on a curve that has been cal-

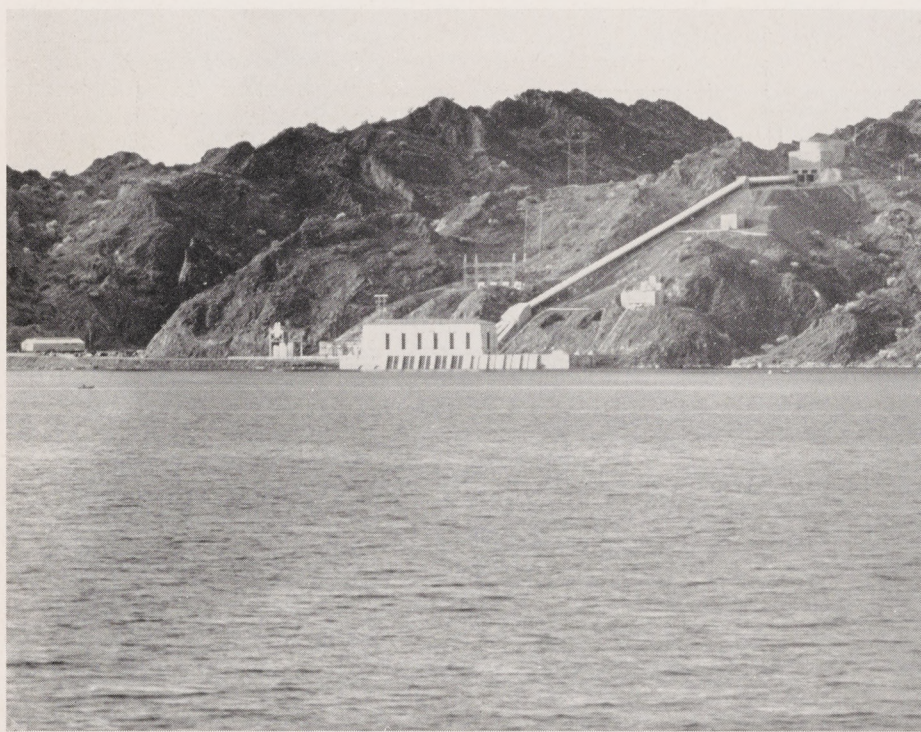
culated to determine where the flashover occurred.

"When lightning strikes the conductor, the steel tower or even the ground near the conductors, an arc flashes across the string of insulators supporting the conductor. When this occurs the flow of power over the transmission line is interrupted by the opening of protective breakers at each end of the line. Usually the breakers may be reclosed and the transmission of electric power resumed under the premise that the weakened insulators will be replaced as soon as convenient after they are located. Sometimes insulators are so badly damaged that they have to be replaced before the line may be energized.

"In the past patrolmen were guided principally by a rough knowledge of where the storm centered, and many miles were covered in carefully scrutinizing through binoculars the insulators at the top of each tower. Now, with the aid of the 'Disturbance Recorders', the dispatcher is able to tell the patrolmen within a mile or two of where the flashover occurred."

HOUSE APPROVES BILL PROVIDING FOR ADJUSTMENT OF BOULDER POWER RATES

On June 17, the House of Representatives of the U. S. Congress passed the Scrugham bill which will place the fiscal operation of the Boulder Dam power plant on an amortization rather than its present competitive basis.



A recent picture of the Intake Pumping Plant taken from a boat approaching the upstream side of the big plant. This view gives an excellent representation of all of the features of the plant, including the delivery line, transmission line, and appurtenant works.